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THE BRYOLOGIST.

VOL. IV.

JULY, 1901.

No. 3.

LICHENS—CETRARIA.

BY CAROLYN W. HARRIS.

(WITH PLATE V.)

To many lichenists the Cetrarias are the most interesting of the family, Usneei, to which they belong, because of their varied thallus, in some species resembling the foliaceous Parmelias, in others the fruticose Cladonias. The name Cetraria is derived from Cetra, meaning an ancient Spanish shield, which the apothecia are said to resemble.

The Cetrarias are very generally distributed. They are found all over the world, but are especially abundant in the northern part of America. All the European species are found here, and we have several which do not occur in Europe.

Generally Cetrarias choose trees for their substratum, but a few are found on rocks and earth. Rhizoids are few or wanting, even where the thallus is horizontal. Cilia are frequently present and in some species are very numerous. Soredia are rare, so the surface of the thallus is smoother in appearance than in the Parmelias. As they develop they become almost free from the substratum and after a hard rain may be found entirely detached.

The thallus varies from foliaceous to fruticose, the lobes are always flattened and rather broad. Generally the thallus is more brittle than in Parmelia, owing to the greater development of the cortical or outer layer, and the less cottony tissue of the medullary or inner layer of the thallus. In the ascendant varieties the thallus is compressed or channeled, in the foliaceous it is expanded and leaf-like. In color it varies, is bright yellow, greenish yellow or straw color, olive, brown, and even black. It is smooth on the under side.

The apothecia are medium to large in size, they are marginal or submarginal, the disk colored differently from the thallus. They are attached obliquely to the ends of the lobes of the thallus. In some species the apothecia are very rare, in others they are very abundant. The disk is thin, somewhat crenate or torn, ranging in color from light chestnut to dark reddish brown. In shape the apothecia are shield-like, but in some species become nearly round. They are flatter, less cup-shaped than in Parmelia.

CETRARIA LACUNOSA, Ach. (Plate V. 5.)—Thallus foliaceous, the lobes rounded and deeply lacunose, giving a pitted or wrinkled appearance. The margins are crenate, yet smooth. Above it is a light pearl color, sometimes with a slate colored tinge. When young it is white below, growing darker with age; is easily detached from the substratum.

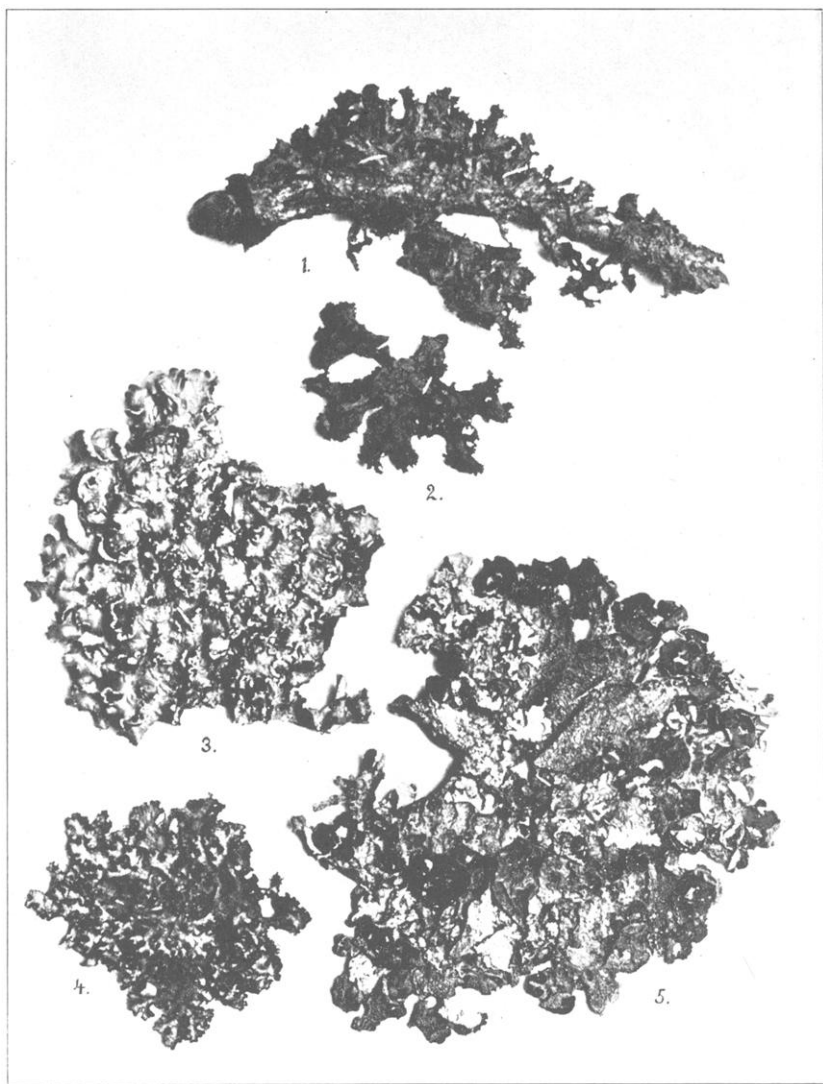


Plate V. 1. *Cetraria juniperina* 2. *C. juniperina* in fruit.
3. *C. Oakesiana* 4. *C. ciliaris* 5. *C. lacunosa*.

The apothecia are borne on the lobes of the thallus. They are usually abundant, somewhat elevated or pedicellate. The disk is light chestnut, growing darker with age, and perforated at the center. The margin, unlike *ciliaris*, is entire. When young the apothecia have the characteristic shield shape but as they develop they assume a round shape. *Cetraria lacunosa* grows on trees and old fence rails and while not so generally found as *C. ciliaris* is a very common species.

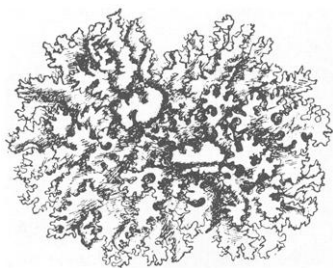


Fig. 1. *C. ciliaris* x I. These are very distinct and numerous on the growing specimen, but disappear to some extent when pressed. When young the thallus is greenish gray turning to olive and lastly to dark brown with age. Beneath it is a greenish brown, with fibrils more or less numerous. The lobes of the thallus are narrow and many cleft.

The apothecia are marginal, rather large. The disk is a light chestnut color which turns, as it develops, to a dark reddish brown. The margins are crenulate, finely notched. This species is found on old rails and on trees, especially hemlocks and birches. It is very common throughout the Northern, Middle, and Southern States. It is easily distinguished from *Cetraria lacunosa*, with which it grows, by the many cilia on the lobes of the thallus. Sometimes the apothecia are so numerous and crowded that it is difficult to realize that they are on the margin of the thallus.

CETRARIA JUNIPERINA(L) Ach. (Plate V. 1 and 2.) Fig. 2. *C. Islandica* XI. —This is a striking lichen on account of its bright yellow thallus, which rivals in coloring *Evernia vulpina*. The narrow crisped lobes of the thallus give it a fluted appearance, it is sometimes pale yellow below, then again the same bright yellow as the upper surface.

The apothecia are submarginal, of medium size, and somewhat elevated. The disk is chestnut, the margin crenulate and often turned inward.

Cetraria juniperina, var. *Pinastri* Ach. is much like *C. juniperina*, but has more compressed lobes with curled margins, which are thickly covered with bright yellow soredia. Both forms are found on trees throughout the Eastern States. *C. Pinastri* is sometimes found on rocks farther North.

CETRARIA OAKESIANA. Tuckm. (Plate V. 3.)—Thallus foliaceous and compact; it adheres more closely to the substratum than *C. ciliaris* and *C. lacunosa*. It is a light straw color, beneath it is brown. The lobes are finely cut and lie quite flat, except at the margins, where they are curled and are covered with white soredia.

CETRARIA ISLANDICA (L.) Ach. (Fig. 2.) Unlike *C. ciliaris* and *C. lacunosa* this species has a fruticose thallus; it is the familiar "Iceland Moss," and is alpine or subalpine in its habitat. It grows on the ground on our higher mountains, but is fertile only in the colder regions.

The thallus is erect and rather stiff, is channeled, with spine-like cilia along the margins. These are so regularly placed that they remind one of the "feet" of a centipede. In color the thallus is a light brown, growing darker at the base or point of attachment. Underneath it is almost white, and sometimes covered with soredia.

The apothecia, which are rare, are large and attached to the broadened lobes of the thallus. The disk is a dark chestnut, with entire margins.

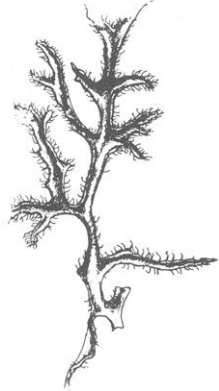


Fig. 2. *C. islandica* x I.

The apothecia are marginal, not common. The disk is chestnut usually with an irregular margin.

This species is generally found growing on trees, either living or dead; occasionally it occurs on rocks in an undeveloped form.

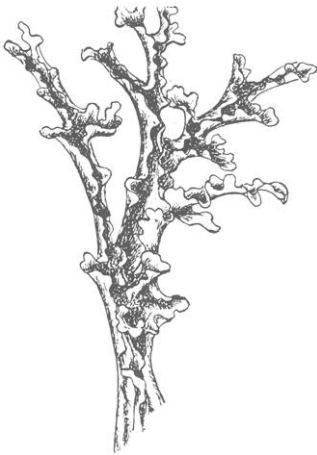


Fig. 3. *C. cucullata* x 2.

CETRARIA CUCULLATA (Bell.) Ach. (Fig. 3,) is found in alpine districts, and the mountains of the Eastern and Western States, on the earth, looking very much like a *Cladonia*.

The thallus is erect, the edges much rolled, forming a deep channel. The margins are very undulate. It is a light gray green, below it is the same color and very smooth.

Apothecia are very rare. They are large and adnate to the under side of the curled-over margins. The disk is chestnut with thin entire margin.

CETRARIA AURESCENS. Tuckerm. (Fig. 4.) This beautiful lichen is found on coniferous trees. The delicate green of the thallus, growing usually in round mats with the bright chestnut colored apothecia massed together, some tiny and cup shaped, others large and flat with crenulate margins, makes a very handsome picture on the branches of old hemlock trees.

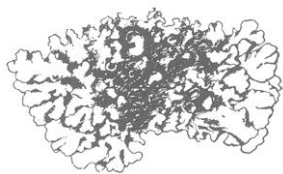


Fig. 4. *C. aurescens* x I.

The thallus is foliaceous and flat. The lobes are narrow and many cleft, with crisped margins. Beneath it is white with many fine soft fibrils of the same color, giving it a woolly appearance. The apothecia are on the margin of the inner lobes of the thallus. The outer edges of the thallus are usually free from apothecia. The disk is a light reddish brown.

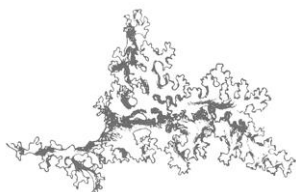


Fig. 5. *C. nivalis* x I.

Apothecia are very rare. They are larger, with crenulate margins and in color are reddish yellow.

CETRARIA NIVALIS (L.) Ach. (Fig. 5.) The "Snow Lichen" is a mountain species, found on earth. The thallus is tufted, rather erect. The lobes are many cleft and are somewhat channeled, but not turned inward as in *C. cucullata*. It is straw color, a little darker at the base, which is smoother than the upper part of the thallus.

CETRARIA GLAUCA. (L.) Ach.—Some forms of *Parmelia perlata* are so like *C. glauca* that it is difficult to distinguish them by the thallus; then as the apothecia are very rare it makes the problem more difficult. *C. glauca* adheres to the substratum more closely than *P. perlata*. The latter usually has a more robust appearance and is found on rocks. *C. glauca* occurs on rocks, but more generally on trees. The upper surface of the thallus is a light straw color, below it is black and smooth. The ragged edges of the lobes are usually covered with soredia. Apothecia, when present, are large, subterminal, disk chestnut color with rough margins.

CETRARIA GLAUCA (L.) Ach. var. **STENOPHYLLA**, is found also in the mountains. The upper surface of the thallus is a grayish white, beneath it is black, but as the lobes turn over the effect on both sides is black and white. The lobes of the thallus are narrower than in *C. glauca* and are thickly covered with coral-like soredia.

CETRARIA ACULEATA (Schreb.) Fr. Thallus much tufted and fruticose, erect and very brittle, with spine-like branches which are covered with spinules. The color is a dark brown and the surface looks polished. In appearance it is much like a *Cladonia*. Apothecia are very rare. They are a little darker than the thallus and on the margins are fine spinules.

CETRARIA PLATYPHYLLA, Tuckerm. (Fig. 6.) Thallus foliaceous, rather rigid, leaf-like and much wrinkled. It is dark brown, rather paler beneath, with no fibrils. The lobes are round and slightly notched. The apothecia are medium, marginal, disk a little darker brown than the thallus, and the edges are rough. *C. platyphylla* resembles some of the *Stictas* in appearance.

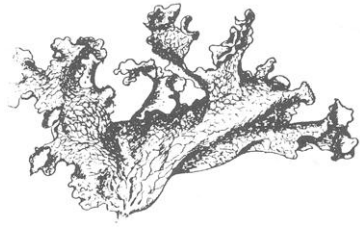


Fig. 6. *C. platyphylla* x I.

CETRARIA ALEURITES. (Ach.) Th. Fr., is not a conspicuous Lichen, but is a common one in the Northern and Middle States, and is found in the mountains of the Southern States. It grows on trees and dead wood, especially on coniferous trees, and adheres closely to the substratum. The thallus is foliaceous, with deep clefts, and is usually covered with isidioid granules which at the center sometimes form a thick crust. It is straw color, in some specimens is greener than in others. Beneath it is paler and much wrinkled with brown fibrils. Apothecia are found on the margin of the thallus; they are a pale chestnut color, with granules on the margin.

SCAPANIA EVANSII N. SP.

By N. BRYHN.

In appearance not unlike the larger forms of *Scapania convexa* Scop. (*Sc. umbrosa* Dum.) *Dioicus*, the male plants mixed with the female, about 10 mm. high, with the leaves 2.25 to 2.5 mm. wide, *caespitose*, the tufts quite spread out, not very dense, below dark green, above yellowish-or ochraceous-green, very closely set with leaves.

Stem rigid, slightly and distantly branched, ascending or erect, on the under side densely covered with long hyaline radicles, dark colored, below blackish, 0.2 mm. thick, in cross-section round-oval, the peripheral cells with pigmented walls in one or two layers.

Leaves pellucid, but firm, quite densely imbricated, equal or subequal, spreading at a right angle with the stem, folded and sharply keeled, two-thirds to three-fourths divided into two unequal lobes; the keel of the leaves distinctly winged below the conduplicate angle of the lobes, the wing entire, two to four cells wide.

Posterior lobe of leaves obliquely obovate-oval, very slightly convex, hardly decurrent, with obtuse apex, and with margin throughout more or less densely dentate with small, sharp and slender teeth, each formed of a single cell.

Anterior lobe half as large, closely pressed against the stem and the posterior lobe, obliquely cordate-reniform, reaching well across the stem, strongly convex, its apex obtuse, the incurved margin finely and distantly dentate with small teeth.